

REMARKS

Applicant hereby submits this Response and Amendment to the Office Action mail dated July 14, 2008.

Applicants submit herewith a Petition and fee in the amount of \$65.00, for a one-month extension of time pursuant to 37 C.F.R. § 1.1.36, to extend this Response due date one month from October 14, 2008 to November 14, 2008.

Claims 1 - 13, 16 and 21 - 24 have been examined. Once again, the Examiner withdrew from consideration claims 14, 15, and 17 – 20 as being drawn to a non-elected invention.

Applicant thanks the Examiner for reconsidering his earlier decision to withdraw claims 14, 15, and 17 – 20, and again respectfully disagrees and is disappointed in the Examiner's decision, but appreciates and respects it. Therefore, in response the Applicants have amended claims 14, 15, and 17-20 to include various additional versions of claims 4 and 7-10, thus necessarily being drawn to the same invention as claims 1-13, 16, and 21-24. As such, the Examiner's restriction of claims 14, 15, and 17-20 has been overcome and Applicant respectfully requests full examination of all the elements and limitation of claims 14, 15, and 17-20.

On a related note, the Applicant finds it inconsistent and hypocritical that the Examiner has withdrawn claims directed to catalyst diagnosis and now cites and applies the Zimlich et al. reference that is directed to catalyst diagnosis to try to establish that the claimed invention for air/fuel control is obvious. Applicant fundamentally objects to such a clearly biased and unsupportable approach. In any case, as discussed in more detail below, Applicant disagrees that one skilled in the art would combine the Zimlich et al. reference with either Akazaki et al. or Maki et al., as suggested by the Examiner.

The Examiner rejected claims 1-8, 10-13, 16, and 21-24 under 35 USC 103(a) as being unpatentable over Akazaki et al. (U.S. Pat. No. 5,566,071) in view of Zimlich et al. (U.S. Pat. No. 5,385,016). This rejection is respectfully traversed. Reconsideration is respectfully requested. For the following reasons, Applicant respectfully submits that Akazaki et al. in view of Zimlich et al. does not render obvious claims 1-8, 10-13, 16, and 21-24 for at least the reasons that one skilled in the art would not reasonably combine Akazaki et al. with Zimlich et al. in the manner suggested by the Examiner so as to achieve the claimed invention, the Examiner has failed to establish a prima facie case of obvious for many of these claims, and both Akazaki et al. and Zimlich et al. fail to disclose, teach or suggest each and every element and/or limitation of the claims.

As a first preliminary matter, Applicant notes for the record that the Response and Amendment dated January 22, 2008 was focused on the issue related to the linear oxygen sensor versus a switching oxygen sensor simply because it was clear that the Examiner had misunderstood a fundamental distinction between the two types of oxygen sensors, and this distinction was, and is still, believed to completely overcome the prior art. Applicant did not address various other aspects of patentable differences between the present invention and the Akazaki et al. and Maki et al. references' systems and methods because the oxygen sensor distinction was so stark. Applicant was expecting in response to have allowable claims. Therefore, herein the Applicant has noted additional deficiencies between the present invention and the Akazaki et al. and Maki et al. references, and hereby reserves the right to note additional distinction as the Examiner may provide more detailed or different rejections in the future.

As a second preliminary matter, even though the Examiner indicated in this rejection that claim 22 is not patentable, Applicant notes that the Examiner has failed to indicate any reason whatsoever for rejecting claim 22. Furthermore, Applicant can not find anywhere in any of Akazaki et al. and/or Zimlich et al. a method of synchronizing individual engine cylinder fuel changes to subsequent changes in exhaust gases' air-fuel conditions whereby additional recordings of said measured time are measured by causing a sequence of said transitions in oxygen sensor output conditions so as to determine a more accurate average for a value of said time period that can be stored in memory. As such, Applicant respectfully submit that claim 22 is patentable over Akazaki et al. and/or Zimlich et al. and respectfully submit that claim 22 must be allowed, or the Examiner must issue another non-final Office Action in response to this Response and Amendment so that the Applicant has at least two opportunities to address any concerns with respect to the patentability of claim 22.

As a general matter, Applicant notes that the Examiner has take the elements and limitations of independent claim 3 as being somehow indicative of all of the elements and limitations of independent claims. This approach of rejection is traversed. The Applicant appreciates the time constraint that the Examiner is under with respect to the USPTO production goals. However, the Applicant can not permit, and the law does not allow, wholesale rejection of multiple claims using reasoning directed to the specific elements and limitations of only a single claim, in this case independent claim 3. A comparison of the elements a limitations listed at pages 3-4 of the pending Office Action clearly shows that the Examiner has focused only on the elements and limitations of independent claim 3, and has not addressed any of the other claim elements and limitations found in the numerous other independent claims. As such,

Applicant respectfully submits that the Examiner has failed to establish a prima facie case of obvious with respect to independent claims 1, 4, 6, 7, 16, 21, 23, and 24, because he has failed to explicitly show where each and every element and limitation of these claims, which differ from the elements and limitations of claim 3, exist in the Akazaki et al. and/or Zimlich et al. references. Further, the Examiner has failed to provide a prima facie case of obviousness with respect to dependent claims 5, 8, 10 and 11, because the Examiner has simply recited the language of the claims without indicating where in either of the Akazaki et al. and/or Zimlich et al. references any of the elements or limitations may be found. Therefore, Applicant respectfully submits that the Examiner must address each element and limitations of these claims or withdraw his rejection of them. Applicant notes for the record that the Examiner's earlier Office Action was equally deficient but the issue was not reached due to an overriding general mistake related to the references missing any reference to a switching oxygen sensor. Given the pending rejections, Applicant must insist on a detailed explanation of the rejections by the Examiner, unless the Examiner agrees with the Applicant that the claims as present are allowable.

The Examiner has now admitted on the record that the Akazaki et al. and Maki et al. do not disclose, teach or suggest using a switching oxygen sensor. Rather, Akazaki et al. and Maki et al. disclose an air/fuel ratio estimation system using a linear air/fuel oxygen sensor (LAF).

The Examiner has also failed to make a reasonable basis for claims 1-8, 10-13, 16, and 21-24 being obvious under 35 USC 103(a) based on Akazaki et al. (U.S. Pat. No. 5,566,071) in view of Zimlich et al. (U.S. Pat. No. 5,385,016). It is clear from a review of the Akazaki et al. and Zimlich et al. references that there is no suggestion or motivation in either reference for

combining the two references, as suggested by the Examiner. Rather, the Examiner relies on what appears to be speculation as to what one skilled in the art would do in using “switching type oxygen sensors from the Zimlich et al. in the method of Akazaki et al., since the use thereof would have been routinely practiced by those of ordinary skill in the art to effectively control an engine air-fuel ration for optimum purification efficiency of a catalyst.” Applicant respectfully disagrees. First, the Examiner bases his conclusion on a misinterpretation of the language of Zimlich et al. at col. 2, line 56 to col. 3, line 2 of Zimlich et al. The Examiner states that “Zimlich et al. teach that it is conventional in the art to utilize a switching type oxygen sensor” That is neither stated nor suggested in Zimlich et al. Rather, Zimlich et al. state that the “Output signal FEGO1 is provided from **conventional exhaust oxygen sensor 41**” This statement merely indicates that “conventional” exhaust sensors are used in the systems and methods disclosed in Zimlich et al. It does not state or suggest that the use of switching oxygen sensors to replace linear oxygen sensors is conventional, as the Examiner appears to say and/or suggest. Further, one can not infer from the disclosure of Zimlich et al., as it appears that the Examiner is doing, that “conventional” means interchangeable. Applicants respectfully submit that, all things being equal, one skilled in the art does not believe that it is “conventional” or would be “routinely practiced by those skilled in the art” to exchange the linear oxygen sensors in the systems and methods of Akazaki et al. with a switching oxygen sensor. And the disclosure of Zimlich et al. certainly does not support this proposition. The use of the term “conventional” in Zimlich et al. is taken completely out of context by the Examiner. Therefore, Applicants respectfully submit that the Examiner’s reasoning and rejection are inherently flawed and must be withdrawn.

Furthermore, assuming for arguments sake that Zimlich et al.'s disclosure did have support for the Examiner's proposition, Applicant's respectfully submit that replacing the linear oxygen sensors in Akazaki et al. with switching oxygen sensors would, without more, result in an inoperable system that achieves less than an "optimum purification efficiency of a catalyst" that was concluded by the Examiner. A single switch type oxygen sensor would certainly not work in the system and method describe in Akazaki et al. Further, adding the three "conventional exhaust gas oxygen" sensors of the Zimlich et al. would seem contrary to, and teaches away from the disclosure of Akazaki et al. which emphasizes the benefits of its "system for eliminating air/fuel ratios in the individual cylinders of a multicylinder internal combustion engine from the output of a **single** air/fuel ratio sensor" (See Akazaki et al. at the Abstract and Fig. 1 (emphasis added).) In addition, Applicant respectfully submits that one skilled in the art would need to make significant and substantial changes to the system and method described in Akazaki et al. to include three conventional exhaust gas oxygen sensor describe in Zimlich et al. and do considerable engineering, not taught or suggested in Akazaki et al. to even possibly integrate this concept, without any certainty that it would ultimately provide the suggested "optimum purification efficiency of a catalyst" that the Examiner claims. Finally, one skilled in the art would likely be concerned at the overall cost of including three conventional exhaust gas oxygen sensors and supporting hardware in place of the single linear oxygen sensor disclosed in Akazaki et al. Stated simply, there is no teaching, suggestion and motivation for combining Akazaki et al. with Zimlich et al. and the Examiner has not provided any reasonable basis for how or why one skilled in the art would combine these two references to obtain the invention claimed in claim 3, or any of the other independent claims or dependent claims of the present application.

With respect to claim 5, the Examiner fails to point to anywhere in Zimlich et al. where there is support for his statement and rejection. Therefore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim and the Examiner's rejection has been overcome.

With respect to claim 11, the Examiner has not even listed or mentioned any of the language of this claim. Further, the Examiner fails to point to anywhere in Zimlich et al. where there is support for his statement and rejection. Therefore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim and the Examiner's rejection has been overcome.

With respect to claim 8, again, the Examiner fails to point to anywhere in Zimlich et al. where there is support for his statement and rejection. Therefore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim and the Examiner's rejection has been overcome.

With respect to claim 10, again, the Examiner fails to point to anywhere in Zimlich et al. where there is support for his statement and rejection. Therefore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim and the Examiner's rejection has been overcome.

Therefore, based on at least the aforementioned, Applicant respectfully submits that claims 1-8, 10-13, 16, and 21-24 are not rendered obvious by Akazaki et al., Zimlich et al., or the two combined, because one skilled in the art would not reasonably combine these references in a manner necessary to achieve the claimed invention. As noted above, Applicant reserves the right to argue detailed aspects of the claim limitations if, and when, the Examiner is able to come

up with support in either Akazaki et al., Zimlich et al., or otherwise to address all the elements and limitations of each and every pending claim.

Applicant has by this amendment amended the claims so that each independent claim in the present patent application includes the use of a switching oxygen sensor (SOS). As such, for at least this reason, the Akazaki et al. (and Maki et al.) reference does not and can not anticipate any of the claims (as amended) in the present patent application.

The Examiner rejected claim 9 under 35 USC 103(a) as being unpatentable over Akazaki et al. in view of Zimlich et al. as applied to claim 7 [**claim 3?**] above, in view of Maki et al. (U.S. Pat. No. 5,758,490). This rejection is respectfully traversed. Reconsideration is respectfully requested. For at least the following reasons, Applicant respectfully submits that neither Akazaki et al. in view of Zimlich et al. as applied above, nor Makai et al., render claim 9 obvious, either individually or in combination.

Claim 9 is dependent on claim 7, and claim 7 has been amended to include a switching oxygen sensor. As admitted by the Examiner, neither Akazaki et al. nor Makai et al. disclose, teach or suggest using a switching oxygen sensor. As noted above, the Examiner has failed to directly and specifically identify where in any of Akazaki et al., Zimlich et al., and Makai et al. each and every element and limitation of claim 7 can be found, and thus has failed to make a prima facie case of obviousness of claim 7. Furthermore, as discussed above, the Examiner has failed to establish a reasonable basis upon which one skilled in the art would combine the Akazaki et al. and Zimlich et al. in the manner necessary to achieve any of the independent or dependent claims of the present application. The Examiner also uses the same faulty reasoning

for combining Makai et al. with Akazaki et al., stating here again that it is somehow conventional to create a system or method as disclosed in Makai et al., that it is “routinely practiced” by those skilled in the art, and that one skilled in the art would combine the two approaches to “effectively control an engine air-fuel ratio for optimum purification efficiency of a catalyst,” appears to indicate that the Examiner is using rhetoric and unsupported reasoning for combining the references in the manner he suggests and that somehow the claimed invention will be miraculously obtained. Applicant objects, because there is nowhere to be found in these references information to draw such conclusions and the difficulty with combining the teachings of the various references is more difficult than the Examiner suggests. In any case, Makai et al., like Akazaki, discloses use of an upstream LAF sensor 54, and a downstream oxygen sensor 56. In fact, Makai et al. only discusses a LAF oxygen sensor and does not mention a switching oxygen sensor. (See Makai et al. at, for example, col. 7, lines 11-24.) Therefore, Makai et al. fails to make up the deficiencies of Akazaki et al. and Zimlich et al., and can not render claim 9 (dependent on claim 7) obviousness. Therefore, claim 9 is patentable over Akazaki et al. in view of Zimlich et al., and further in view of Makai et al., for at least these reasons that it fails to disclose, teach or suggest a switching oxygen sensor along with all the other limitations as claimed in the present patent application. Stated simply, one skilled in the art would not combine the Akazaki et al., Zimlich et al., and Makai et al. references in the manner suggested by the Examiner and in the manner sufficient to meet each and every limitation of claim 9 (including the limitations of claim 7), and the Examiner has not established otherwise.

As noted above, claims 14, 15, and 17-20 have now been amended to have various combinations of elements and limitations drawn from claims other examined claims.

Applicants have amended claims 14, 15, and 17-20 to include various additional versions of claims 4 and 7-10, thus necessarily being drawn to the same invention as claims 1-13, 16, and 21-24. Applicant respectfully submits that each and every element and limitation of these claims be considered and these claims be duly examined. Applicant respectfully submits that amended claims 14, 15, and 17-20 are patentable over Akazaki et al., Zimlich et al., and Makai et al. for at least the reasons discussed above and the additional reason that many of the claim elements and limitations of these claims have previously been ignored by the Examiner.

Based on the aforementioned, Applicant respectfully submits that claims 1-24 are in condition for allowance as patentable over the cited and applied references. Applicant respectfully request that claims 1-24 now be allowed and passed to issue as soon as possible. **If far any reason the Examiner disagrees, Applicant asks that the Examiner contact the undersigned to set a time for an Examiner Interview to quickly place the claims in condition for allowance.**

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to the charge card identified in the previously submitted credit card form.

If for any reason the Examiner believes that the present application is not now in condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below or on my mobile telephone at 703-731-7220.

Respectfully submitted,



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